FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M115804	Client:	Alaskan Copper Works
Date Received:	03/01/07	Project:	PO# M115804, F&BI 703015
Date Extracted:	03/02/07	Lab ID:	703015-01 x100
Date Analyzed:	03/05/07	Data File:	703015-01 x100.072
Matrix:	Sludge	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	123	60	125
Indium	118	60	125
Bismuth	110	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	4,900
Nickel	2,700
Copper	510
Zinc	2,700
Arsenic	<100
Silver	<100
Cadmium	<100
Lead	140

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Alaskan Copper Works
Date Received:	Not Applicable	Project:	PO# M115804, F&BI 703015
Date Extracted:	03/02/07	Lab ID:	I7-78 mb
Date Analyzed:	03/05/07	Data File:	I7-78 mb.019
Matrix:	Sludge	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	94	60	125
Indium	94	60	125
Bismuth	98	60	125

Analyte:	Concentration mg/kg (ppm)
Chromium	<1
Nickel	<1
Copper	<1
Zinc	<2
Arsenic	<1
Silver	<1
Cadmium	<1
Lead	<1

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ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M115804	Client:	Alaskan Copper Works
Date Received:	03/01/07	Project:	PO# M115804, F&BI 703015
Date Extracted:	03/05/07	Lab ID:	703015-01 x1000
Date Analyzed:	03/05/07	Data File:	703015-01 x1000.077
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	123	60	125
Indium	103	60	125
Bismuth	101	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	6,020,000
Nickel	3,640,000
Copper	134,000 J
Zinc	3,120,000 J
Arsenic	55,100
Silver	<1,000
Cadmium	<1,000
Lead	112,000

J - The LCS associated with the analyte is out of control limits. The reported value should be considered an estimate.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	M115804	Client:	Alaskan Copper Works
Date Received:	03/01/07	Project:	PO# M115804, F&BI 703015
Date Extracted:	03/05/07	Lab ID:	703015-01 x100
Date Analyzed:	03/05/07	Data File:	703015-01 x100.050
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	189 vo	60	125
Indium	100	60	125
Bismuth	188 vo	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	S ve
Nickel	2,090,000 ve
Copper	73,000 J
Zinc	1,670,000 ve
Arsenic	55,300
Silver	124
Cadmium	961
Lead	68,100 J

vo - The value reported fell outside the control limits established for this analyte.

ve - The value reported exceeded the calibration range established for the analyte. The reported concentration is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported value should be considered an estimate.

S – The analyte exceeded the instrument quantitation range. The sample was diluted.

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Alaskan Copper Works
Date Received:	Not Applicable	Project:	PO# M115804, F&BI 703015
Date Extracted:	03/05/07	Lab ID:	I7-79 mb
Date Analyzed:	03/05/07	Data File:	I7-79 mb.024
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	HR

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	111	60	125
Indium	117	60	125
Bismuth	121	60	125

Analyte:	Concentration ug/L (ppb)
Chromium	<1
Nickel	<1
Copper	<1
Zinc	<2
Arsenic	<1
Silver	<1
Cadmium	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015
Date Extracted: 03/02/07
Date Analyzed: 03/02/07

RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR SPECIFIC GRAVITY @ 15.56 °C

Sample ID Laboratory ID	Specific Gravity
M115804 703015-01	1.24

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015
Date Extracted: 02/28/07
Date Analyzed: 03/01/07

RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR PERCENT ACID

Sample ID Laboratory ID	Percent Acid
M115804 702307-01	8.6

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SLUDGE SAMPLES FOR TOTAL METALS BY EPA METHOD 200.8

Laboratory Code: 703010-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Chromium	mg/kg (ppm)	6.67	6.58	1	0-20
Nickel	mg/kg (ppm)	13.7	13.4	2	0-20
Copper	mg/kg (ppm)	5.47	5.33	3	0-20
Zinc	mg/kg (ppm)	9.64	8.86	8	0-20
Arsenic	mg/kg (ppm)	<1	<1	nm	0-20
Silver	mg/kg (ppm)	<1	<1	nm	0-20
Cadmium	mg/kg (ppm)	<1	<1	nm	0-20
Lead	mg/kg (ppm)	1.63	1.33	20	0-20

Laboratory Code: 703010-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chromium	mg/kg (ppm)	50	6.67	96	50-150
Nickel	mg/kg (ppm)	25	13.7	87 b	50-150
Copper	mg/kg (ppm)	50	5.47	94	50-150
Zinc	mg/kg (ppm)	50	9.64	103	50-150
Arsenic	mg/kg (ppm)	10	<1	100	50-150
Silver	mg/kg (ppm)	10	<1	115	50-150
Cadmium	mg/kg (ppm)	10	<1	106	50-150
Lead	mg/kg (ppm)	20	1.63	101	50-150

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SLUDGE SAMPLES FOR TOTAL METALS BY EPA METHOD 200.8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	mg/kg (ppm)	50	94	70-130
Nickel	mg/kg (ppm)	25	94	70-130
Copper	mg/kg (ppm)	50	97	70-130
Zinc	mg/kg (ppm)	50	101	70-130
Arsenic	mg/kg (ppm)	10	99	70-130
Silver	mg/kg (ppm)	10	110	70-130
Cadmium	mg/kg (ppm)	10	101	70-130
Lead	mg/kg (ppm)	20	99	70-130

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS BY EPA METHOD 200.8

Laboratory Code: 702289-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Chromium	ug/L (ppb)	2.41	2.43	1	0-20
Nickel	ug/L (ppb)	6.33	6.36	0	0-20
Copper	ug/L (ppb)	10.4	11.4	9	0-20
Zinc	ug/L (ppb)	16.0	18.4	14	0-20
Arsenic	ug/L (ppb)	9.69	9.83	1	0-20
Silver	ug/L (ppb)	<1	<1	nm	0-20
Cadmium	ug/L (ppb)	<1	<1	nm	0-20
Lead	ug/L (ppb)	4.17	4.49	7	0-20

Laboratory Code: 702289-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Chromium	ug/L (ppb)	20	2.41	97	50-150
Nickel	ug/L (ppb)	20	6.33	98 b	50-150
Copper	ug/L (ppb)	20	10.4	100 b	50-150
Zinc	ug/L (ppb)	50	16.0	104 b	50-150
Arsenic	ug/L (ppb)	10	9.69	110 b	50-150
Silver	ug/L (ppb)	5	<1	115	50-150
Cadmium	ug/L (ppb)	5	<1	107	50-150
Lead	ug/L (ppb)	10	4.17	114 b	50-150

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS BY EPA METHOD 200.8

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chromium	mg/kg (ppm)	20	130	70-130
Nickel	mg/kg (ppm)	20	127	70-130
Copper	mg/kg (ppm)	20	131 vo	70-130
Zinc	mg/kg (ppm)	50	133 vo	70-130
Arsenic	mg/kg (ppm)	10	129	70-130
Silver	mg/kg (ppm)	5	147 vo	70-130
Cadmium	mg/kg (ppm)	5	131 vo	70-130
Lead	mg/kg (ppm)	10	130	70-130

vo - The value reported fell outside the control limits established for this analyte.

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AQUEOUS SAMPLES FOR SPECIFIC GRAVITY @ 15.56 °C

Laboratory Code: 703015-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Specific Gravity	1.24	1.24	0	0-2

Date of Report: 03/08/07
Date Received: 03/01/07
Project: 8600 Acid Tank, PO# M115804, F&BI 703015

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF AQUEOUS SAMPLES FOR PERCENT ACID

Laboratory Code: 703015-01 (Duplicate)

Analyte	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Percent Acid	8.6	8.6	0	0-20

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Charlene Morrow, M.S.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
FAX: (206) 283-5044
e-mail: fbi@isomedia.com

March 8, 2007

DUPLICATE

INVOICE #07ACU0308-1

Accounts Payable
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

RE: Project 8600 Acid Tank, PO# M115804, F&BI 703015 - Results of testing requested by Gerry Thompson for material submitted on March 1, 2007.

2 samples analyzed for Total Chromium, Copper, Nickel and Zinc Arsenic, Cadmium, Lead, and Silver by Method 200.8 @ $160 per sample	$ 320.00
1 sample analyzed for Specific Gravity @ 15.56°C by ASTM Method D-1298 @ $25 per sample	25.00
1 sample analyzed for Percent Acid Content @ $50 per sample	50.00
Rush Charges (7 day) 30% of $235.00	70.50
Amount Due	$ 465.50

FEDERAL TAX ID #(b) (6)

703015

SAMPLE CHAIN OF CUSTODY ME 03/01/07

AI4

Send Report To Gerald Thompson
Company ALASKAN Copper Works
Address 628 S. Hanford st
City, State, ZIP Seattle WA 98134
Phone # 206-571-6033 Fax # 206-382-4309

SAMPLERS (signature)
PROJECT NAME/NO. 8600 Acid tank
PO # M115804
REMARKS treat as two samples Solid and liquid

Page # _____ of _____

TURNAROUND TIME
☐ Standard (2 Weeks)
☒ RUSH 7 days
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	% of HNO3	Spec. Gravity	Cr, Cu, Ni, Zn	As, Cd, Pb, Ag		Notes
M115804	01	3/1/07	11:10	HNO3	1							X	X	X	X		

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Gerald Thompson	Acw	3/1/07	1:25pm
Received by:		Nhan Phan	FeBI	3/1/07	V
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

Samples received at 18 °C

AKC-000696

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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March 8, 2007

Gerry Thompson, Project Manager
Alaskan Copper Works
628 South Hanford
Seattle, WA 98134

Dear Mr. Thompson:

Included are the results from the testing of material submitted on March 1, 2007 from the 8600 Acid Tank, PO# M115804, F&BI 703015 project. There are 13 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
ACU0308R